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Atty. Dkt. No. 049411-0248



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Yu-Chong TAI et al.
Title: Microfluidic Devices and Methods with
Electrochemically Actuated Sample Processing
Appl. No.: 10/603573
Filing Date: 6/24/2003
Examiner: Noguerola
Art Unit: 1753

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT
UNDER 37 CFR §1.56

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith on Form PTO/SB/08 is a listing of documents known to Applicants in order to comply with Applicants' duty of disclosure pursuant to 37 CFR §1.56.

A copy of each non-U.S. patent document and each non-patent document is being submitted to comply with the provisions of 37 CFR §1.97 and §1.98.

The submission of any document herewith, which is not a statutory bar, is not intended as an admission that such document constitutes prior art against the claims of the present application or that such document is considered material to patentability as defined in 37 CFR §1.56(b). Applicants do not waive any rights to take any action which would be appropriate to antedate or otherwise remove as a competent reference any document which is determined to be a *prima facie* art reference against the claims of the present application.

The USPTO has waived the requirement under 37 CFR 1.98(a)(2)(iii) to submit copies of cited pending applications which are stored in the USPTO's Image File Wrapper (IFW) system. Applications filed on or after June 30, 2003, and international applications that have entered the national stage on or after June 30, 2003, have been or are being scanned into the IFW system. Accordingly, copies of these types of documents are not being supplied in connection with this

application. Reference is being made to OG Notice dated October 19, 2004, *Waiver of the Copy Requirement in 37 CFR 1.98 for Cited Pending U.S. Patent Applications*.

TIMING OF THE DISCLOSURE

The listed documents are being submitted in compliance with 37 CFR §1.97(b), before the mailing date of the first Office Action on the merits.

RELEVANCE OF EACH DOCUMENT

All of the documents are in English.

Applicants respectfully request that each listed document be considered by the Examiner and be made of record in the present application and that an initialed copy of Form PTO/SB/08 be returned in accordance with MPEP §609.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 CFR §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741.

Respectfully submitted,

Date August 11, 2005

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By Steven Rutt

Steven Rutt
Attorney for Applicant
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Substitute for form 1449B/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

Date Submitted: August 11, 2005

(Use as many sheets as necessary)

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of

3

Complete if Known

Application Number	10/603,573
Filing Date	06/24/2003
First Named Inventor	Yu-Chong TAI
Group Art Unit	1753
Examiner Name	Unassigned
Attorney Docket Number	049411-0248

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
	B1	09/442,843		Tai et al.	11-18-1999	
	B2	2003-0008192	A1	Tai et al.	01-09-2003	
	B3	2003-0228411	A1	Tai et al.	12-11-2003	
	B4	2004-0237657	A1	Tai et al.	12-02-2004	
	B5	2005-0051489	A1	Tai et al.	03-10-2005	
	B6	4,402,817		Maget	09-06-1983	
	B7	4,687,423		Maget et al.	08-18-1987	
	B8	5,994,696		Tai et al.	11-30-1999	
	B9	6,162,367		Tai et al.	12-19-2000	
	B10	6,240,962	B1	Tai et al.	06-05-2001	
	B11	6,436,229	B2	Tai et al.	08-20-2002	
	B12	6,520,753	B1	Grosjean et al.	02-18-2003	
	B13	6,709,604	B2	Tai et al.	03-23-2004	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Name of Patentee or Applicant of Cited Documents	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Office ³	Number ⁴	Kind Code ⁵ (if known)				

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ⁶
	B14	BÖHM, et al., "A closed-loop controlled electrochemically actuated micro-dosing system," J. Micromech., Microeng. Vol. 10, pp. 498-504, (2000).	
	B15	CAMERON et al., "Electrolytic actuators: Alternative, high performance, material-based devices," PNSA, Vol. 99, No. 12, pp. 7827-7831, (June 11, 2002).	
	B16	CHEN et al., "A Planar Electroosmotic Micropump," Journal of Microelectromechanical Systems, Vol. 11, No. 6, pp. 672-683, (December 2002).	
	B17	CHEN et al., "Generating high-pressure sub-microliter flow rate in packed microchannel by electroosmotic force: potential application in microfluidic systems," Sensors and Actuators B 88, pp. 260-265, (2003).	

Examiner
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT Date Submitted: August 11, 2005 <i>(use as many sheets as necessary)</i>				Application Number	10/603,573
				Filing Date	06/24/2003
				First Named Inventor	Yu-Chong TAI
				Group Art Unit	1753
				Examiner Name	Unassigned
Sheet	2	of	3	Attorney Docket Number	049411-0248

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	B18	DASGUPTA et al., "Electroosmosis: A Reliable Fluid Propulsion System for Flow Injection Analysis," Analytical Chemistry, Vol. 66, No. 11, pp. 1792-1798, (June 1, 1994).		
	B19	HARRIS, et al., "Shrinking the LC Landscape", Analytical Chemistry, pp. 65A-69A (Feb. 1, 2003).		
	B20	KÄMPER et al., "A Self-Filling Low-Cost Membrane Micropump," International conference on Micro Electro Mechanical Systems, pp. 432-437, (January 1998).		
	B21	LAURELL et al., "Miniaturization is mandatory unraveling the human proteome," Proteomics, Vol. 2, pp. 345-351, (2002).		
	B22	LAZAR et al., "Multiple Open-Channel Electroosmotic Pumping System for Microfluidic Sample Handling," Analytical Chemistry, Vol. 74, No. 24, pp. 6259-6268, (December 15, 2002).		
	B23	LEE et al., "Solvent Compatibility of Poly(Dimethylsiloxane)-Based Microfluidic Devices," Analytical Chemistry, Vol. 75, No. 23, pp. 6544-6554, (December 1, 2003).		
	B24	LEE et al., "Fabrication and in vitro test of a microsyringe," Sensors and Actuators 83, pp. 17-23, (2000).		
	B25	LICKLIDER et al., "A Micromachined Chip-Based Electrospray Source for Mass Spectrometry," Analytical Chemistry, Vol. 72, No. 2, pp. 367-375, (January 15, 2000).		
	B26	MOORE et al., "A Microscale Electrospray Interface Incorporating a Monolithic, Poly(styrene-divinylbenzene) Supporting for On-Line Liquid Chromatography/Tandem Mass Spectrometry Analysis of Peptides and Proteins," Analytical Chemistry, Vol. 70, No. 23, pp. 4879-4884, (December 1, 1998).		
	B27	MUNYAN et al., "Electrically actuated, pressure-driven microfluidic pumps," Lap on a Chip, Vol. 3, pp. 217-220, (2003).		
	B28	NEAGU et al., "An electrochemical active valve," Electrochimica Acta, Vol. 42, No. 20-22, pp. 3367-3373, (1997).		
	B29	NEAGU et al., "An Electrochemical Microactuator: Principle and First Results," Journal of Microelectromechanical Systems, Vol. 5, No. 1, pp. 2-9		
	B30	NGUYEN et al., "MEMS - Micropumps: A Review," Transactions of the ASME, Vol. 124, pp. 384-392, (June 2002).		
	B31	PARK et al., "A Piezoelectric Micropump Using Resonance Drive with High Power Density," JSME International Journal, Series C, Vol. 45, No. 2, pp. 502-509, (2002)		
	B32	PAUL et al., "Electrokinetic Generation of High Pressures Using Porous Microstructures," Micro Total Analysis Systems, pp. 49-52, (October 1998).		

Examiner Signature	Date Considered
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	B33	REICHMUTH et al., "Increasing the performance of high-pressure, high-efficiency electrokinetic micropumps using zwitterionic solute additives," Sensors and Actuators B 92, pp. 37-43, (2003).			
	B34	REYES et al., "Micro Total Analysis Systems. 1. Introduction, Theory, and Technology," Analytical Chemistry, Vol. 74, No. 12, pp. 2623-2636, (June 15, 2002).			
	B35	SCHABMUELLER et al., "Self-aligning gas/liquid micropump," Journal of Micromechanics and Microengineering, Vol. 12, pp. 420-424, (2002).			
	B36	SELVAGANAPATHY, et al., "Bubble-Free Electrokinetic Pumping," Journal of Microelectromechanical Systems, Vol. 11, No. 5, pp. 448-453, (October 2002).			
	B37	SHIH et al., "Surface Micromachined and Integrated Capacitive Sensors for Microfluidic Applications," Transducers, pp. 388-391, (2003).			
	B38	STANCZYK et al., "A Microfabricated Electrochemical Actuator for Large Displacements," Journal of Microelectromechanical Systems, Vol. 9, No. 3, pp. 314-320, (September 2000).			
	B39	SUZUKI et al., "A reversible electrochemical nanosyringe pump and some consideration to realize low-power consumption," Sensors and Actuators B 86, pp. 242-250, (2002).			
	B40	TAKAMURA et al., "Low-voltage electroosmosis pump for stand-alone microfluidics devices," Electrophoresis 2003, Vol. 24, pp. 185-192, (2003).			
	B41	WOIAS et al., "Micropumps – summarizing the first two decades," SPIE, Vol. 4560, pp. 39-52, (2001).			
	B42	WU et al., "MEMS flow sensors for nano-fluidic applications," Sensors and Actuators A 89, pp. 152-158, (2001).			
	B43	XIE et al., "An Electrochemical Pumping System for On-Chip Gradient Generation," Analytical Chemistry, Vol. 76, No. 13, pp. 3756-3763, (July 1, 2004).			
	B44	XIE et al., "Electrolysis-Based On-Chip Dispensing System for ESI-MS," International Conference on Micro Electro Mechanical Systems, pp. 443-446, (2003).			
	B45	ZENG et al., "Fabrication and characterization of electroosmotic micropumps," Sensors and Actuators B 79, pp. 107-114, (2001).			

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